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What are Blockchain Protocols and How Do they Work?



Genesis DevCon · Follow

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understand what a blockchain protocol is through two exemplary blockchain protocols thus deducing its essential features.

What is a protocol?

As all of us already know, a protocol, in computer science, is a set of rules or procedures that govern the transfer of data between two or more electronic devices. This protocol helps in establishing how, in order for computers to exchange information, the information must be structured and how each party will send and receive it.

Some examples of familiar internet protocols are TCP/IP, HTTP, and DNS.



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These rules that govern a blockchain network are referred to as a protocol. It is essentially the common communication rules that the network plays by.

Must-know terms for blockchain protocol

Distributed Ledgers: Distributed ledgers are a type of database that are spread across the multiple peers and the records are stored one after the other in a continuous ledger.

Smart Contracts: a set of logic rules in the form of a coded script which can be embedded into the blockchain to govern a transaction.



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native coin Ether. Ethereum allows developers to build, among other things, dApps on its protocol. The node-communication rules for one dApp can be different from another dApp which are defined by smart contracts. Tokens are, therefore, the native digital asset of dApps.

51% Attack: the ability of someone controlling more than 50% of network nodes to revise transaction history and indulge in double spending.

Example: The nodes on a blockchain network are supposed to broadcast the blocks they form to the entire network. If a node, or a group of nodes, begin to control more than 50% of the network, it can indulge in forming blocks privately and not



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Design objective: allowing crypto payment transactions over a decentralised network.

- Public, permissionless blockchain which anyone can join.
- Underlying technology components: cryptographic hash function, digital signature, p2p network, private-and-public key encryption, and proof-of-work (PoW) consensus algorithm.
- Every node has access to complete information on the blockchain. Therefore, Decentralised.
- Users can conduct non-reversible transactions without the need to



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The Ethereum blockchain gave a larger, wider horizon to the objectives that blockchain could serve. Multiple cryptocurrency projects such as VeChain and OmiseGo were launched using the Ethereum platform. It also became a platform for dApp development and dApps such as Cryptokitties, Brave, and PundiX were developed on it.

Following this innovation, multiple protocols were launched with one or the other innovation. For instance, the every-node-verification feature of the blockchain rendered it slow thus leading to scalability issues. Zilliqa, EOS, and Cardano are some examples of blockchains that attempted to build solutions for scalability issues.



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All peers on a blockchain network reach a consensus to verify transactions. This consensus is governed by an algorithm fed into the protocol layer of the blockchain. The blockchain gives all peers an identical copy of each transaction which eliminates trust thus making a trustless, distributed network.

The essential features of a blockchain protocol can then be summarized as:

- Decentralised: a blockchain must be stored in a way that it can be accessed and copied and any node on the network.



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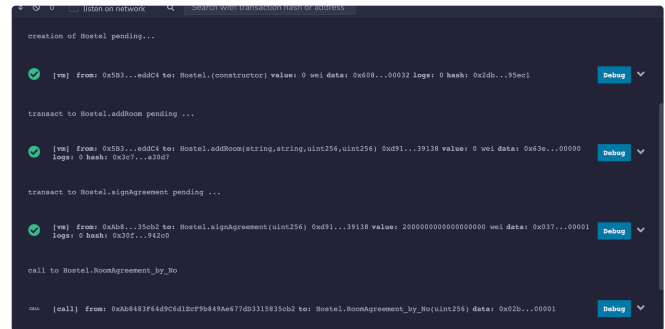
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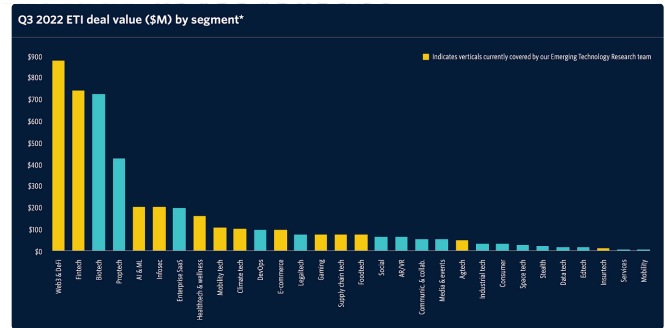
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